

# MATERIAL SAFETY DATA SHEET

**SOLARIS**

DATE PREPARED: 10/11/1996

MSDS No: 6018

GroundClear™ Super Edger Grass &amp; Weed Control

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** GroundClear™ Super Edger Grass & Weed Control**PRODUCT DESCRIPTION:** Herbicide

### MANUFACTURER

The SOLARIS Group  
of Monsanto Company

P.O. Box 5008

San Ramon, CA 94583-0808

**EPA REG. NO.:** 239-2516E **PN:** 5515-F

### 24 HR. EMERGENCY TELEPHONE NUMBERS

**Emergency Phone** 800-454-2333

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>Wt. %</u>	<u>CAS Registry #</u>
Glyphosate, Isopropylamine salt of N-(phosphonomethyl) glycine	0.25	38641-94-0
Oxyfluorfen, 2-chloro-1-(3-ethoxy-4-nitrophenoxy)-4-(trifluoromethyl)benzene	0.25	42874-03-3
INERT INGREDIENTS	~ 99.49	

"Inert Ingredients" is a term defined by the U.S. Environmental Protection Agency under the Federal Insecticide, Fungicide, and Rodenticide Act (40 CFR 158.153). It refers to any substance, other than an active ingredient, which is intentionally added to a pesticide product. Some inert ingredients may be hazardous chemicals, as defined by the Federal OSHA Hazard Communication Standard (29 CFR 1910.1200). The hazards associated with these inert ingredients have been included in this document.

## 3. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

**PHYSICAL APPEARANCE:** Light amber liquid

**IMMEDIATE CONCERNS: - CAUSES EYE IRRITATION**

- AVOID CONTACT WITH EYES
- KEEP OUT OF REACH OF CHILDREN

**POTENTIAL HEALTH EFFECTS**

**EYES:** This substance is slightly irritating to the eyes. Eye contact may include discomfort, tearing, redness, swelling, and blurred vision. See Toxicological Information, section 11.

**SKIN:** This substance is not expected to cause prolonged or significant skin irritation. If absorbed through the skin, this substance is considered practically non-toxic to internal organs. See Toxicological Information, section 11.

**INGESTION:** Ingestion may cause irritation of the digestive tract which may include nausea, vomiting, and diarrhea. If swallowed, this substance is considered practically non-toxic to internal organs. See Toxicological Information, section 11.

**INHALATION:** If inhaled, this substance is considered practically non-toxic to internal organs. See section 11, Toxicological Information.

**SENSITIZATION:** This product contains trace quantities of methylisothiazolinone and methylchloroisothiazolinone as preservatives. At higher concentrations these preservatives have been shown to cause allergic skin reactions in susceptible individuals. These preservatives are also found in a number of widely used personal care products, such as shampoos and cosmetics.

**4. FIRST AID MEASURES**

**EYES:** Flush eyes immediately with fresh water for at least 15 minutes while holding the eyelids open. Remove contact lenses if worn. Call a physician if irritation persists.

**SKIN:** No first aid procedures are required. As a precaution, wash skin thoroughly with soap and water. Remove and wash contaminated clothing.

**INGESTION:** If swallowed, immediately telephone a poison control center, emergency treatment center or a physician for advice. DO NOT make person vomit unless directed to do so by medical personnel. If medical advice cannot be obtained, then immediately take person and product container, with label, to an emergency treatment center.

**INHALATION:** Since this material is not expected to be an immediate inhalation problem, no first aid procedures are required. If respiratory discomfort or irritation occurs, move the person to fresh air. See a doctor if

discomfort or irritation continues.

**ADDITIONAL INFORMATION:** Medical Information: Call day or night, 1-800-454-2333 OR 1-800-457-2022.

## 5. FIRE FIGHTING MEASURES

**FLASHPOINT AND METHOD:** 121°F TAG CC

**HAZARDOUS COMBUSTION PRODUCTS:** Heating this material (Oxyfluorfen component) may generate hydrogen chloride, hydrogen fluoride and nitrogen oxide.

**FIRE FIGHTING PROCEDURES:** This material will not burn. Products of combustion from fires involving this material may be toxic. Avoid breathing smoke and mists. Avoid personnel and equipment contact with fallout and runoff. Minimize the amount of water used for fire fighting. Do not enter any enclosed area without full protective equipment, including self-contained breathing equipment. Contain and isolate runoff and debris for proper disposal. Decontaminate personal protective equipment and fire fighting equipment before reuse. Read the entire document.

## 6. ACCIDENTAL RELEASE MEASURES

**SMALL SPILL:** Soak up spilled material with paper towels and discard in trash.

**LARGE SPILL:** Liquid spills on floor or other impervious surfaces should be contained or diked, and should be absorbed with attapulgate, bentonite or other absorbent clays. Collect contaminated absorbent, place in plastic-lined metal drum and dispose of in accordance with instructions provided under Section 13. "DISPOSAL". Thoroughly scrub floor or other impervious surface with a strong industrial type detergent solution and rinse with water.

For liquid spills that soak into the ground, contact the applicable Federal, State and or County Health Dept. for disposal recommendations. If disposal is required then refer to Section 13 "DISPOSAL" for instructions.

Leaking containers should be separated from non-leakers and either the container or its contents transferred to a drum or other non-leaking container and disposed of in accordance with instructions provided under Section 13 "Disposal". Any recovered spilled liquid should be similarly collected and disposed of.

Do not contaminate water, foodstuffs or feed by storage or disposal.

**GENERAL PROCEDURES:** Observe all protection and safety precautions when cleaning up spills -- see Section 8. "EXPOSURE CONTROLS/PERSONAL PROTECTION". For help with any spill, leak, fire or exposure involving this material, call day or night (800) 454-2333.

## 7. HANDLING AND STORAGE

**GENERAL PROCEDURES:** Keep pesticide in original container. Do not put concentrate or dilute into food or drink containers. Store in a secure, preferably locked, storage area. Protect container from freezing.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**ENGINEERING CONTROLS:** Provide natural or mechanical ventilation to control exposure levels below airborne exposure limits (see below). If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment. Consult NFPA Standard 91 for design of exhaust systems.

### PERSONAL PROTECTION

**EYES AND FACE:** For application of product in accordance with label instructions, no special eye protection is needed.

Where there is significant potential for eye contact, wear chemical goggles and have eye flushing equipment available.

**SKIN:** No special skin protection is usually necessary. Avoid prolonged or frequently repeated skin contact with this material. Skin contact can be minimized by wearing protective clothing. Wash thoroughly with soap and water after handling.

**RESPIRATORY:** Avoid breathing vapor or mist. Use NIOSH/MSHA approved respiratory protection equipment (full facepiece recommended) when airborne exposure limits are exceeded (see below). Consult respirator manufacturer to determine appropriate type equipment for given application. Observe respirator use limitations specified by NIOSH/MSHA or the manufacturer. Respiratory protection programs must comply with 29 C.F.R. 1910.134.

For application of product in accordance with label instructions, no special respiratory protection is required.

### OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200):

Chemical Name	EXPOSURE LIMIT		
	OSHA PEL	ACGIH TLV	VAC
2-chloro-1-(3-ethoxy-4-nitrophenoxy)-4-(trifluoromethyl)benzene	None	None	Non
Aromatic Hydrocarbon	100 ppm	100 ppm	150

Legend MK  
MON 0818

None	None	Non
None	None	Non

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**PHYSICAL STATE:** Liquid

**APPEARANCE:** Light amber liquid

**pH:** ~5.0 to 5.5

**PERCENT VOLATILE:** No Data Available

**BOILING POINT:** No Data Available

**FREEZING POINT:** No Data Available

**SOLUBILITY IN WATER:** Miscible with water.

**EVAPORATION RATE:** No Data Available

**SPECIFIC GRAVITY:** 0.9988 gr/cc at 20°C

## 10. STABILITY AND REACTIVITY

**STABLE:** YES

**HAZARDOUS POLYMERIZATION:** NO

**HAZARDOUS DECOMPOSITION:** Heating this material (Oxyfluorfen component) may generate hydrogen chloride, hydrogen fluoride and nitrogen oxide.

**INCOMPATIBLE MATERIALS:** May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

## 11. TOXICOLOGICAL INFORMATION

### ACUTE

**EYES:** Irritation: Rabbit - Moderately irritating to eyes, no corneal opacity, mild iritis and slight-moderate conjunctival irritation. All eyes normal by 72 hours. EPA FIFRA Toxicity Category - III.

**DERMAL LD<sub>50</sub>:** Rabbit dermal LD50 >5.0 gm/kg. Skin irritation: Rabbit - Mild irritation. EPA FIFRA Toxicity Category - IV.

**ORAL LD<sub>50</sub>:** The oral LD50 in rats is > 5 g/kg. EPA Toxicity Category -

## IV.

**INHALATION LC<sub>50</sub>:** 4 hour inhalation LC50 for rats : > 5.3 mg/liter/hour of undiluted product. EPA Toxicity Category - IV.

**SENSITIZATION:** No evidence of allergic skin reactions was observed in guinea pigs following repeated skin exposure.

**CHRONIC:** Data from glyphosate laboratory toxicology studies were conducted with a formulation comprised of 62% isopropylamine salt of glyphosate (MON 0139).

Rabbits - 3 week dermal: Repeated daily primarily resulted in slight skin irritation.

Dogs - 6 month feeding: Only slight body weight changes noted.

Rats - 90 day feeding: No treatment related effects.

Mice - 90 day feeding: Decreased weight gains at the high dose level group animals.

Oxyfluorfen: No data available.

**CARCINOGENICITY:**

**CARCINOGENICITY COMMENTS:** Glyphosate: Not a carcinogen. Glyphosate did not produce tumors in any of the long-term toxicology studies. EPA has classified glyphosate in category "E" (Evidence of noncarcinogenicity for humans).

Mice: 2-year feeding study. Reduced body weight gain and effects on liver tissues were observed at high dose levels.

Rats: 2-year feeding study. Reduced body weight gain and eye changes were observed at the high dose level in one study, while no treatment related effects occurred in a second study conducted at lower dose levels.

Dogs: No adverse effects were observed in feeding studies with dogs.

Oxyfluorfen (technical 70-75%): Chronic feeding studies:

Rats: No evidence of carcinogenicity. Mice: Male mice had an increased incidence of liver tumors only in the high dose group (200 ppm). No tumors observed in any of the female mice test groups. EPA classified Oxyfluorfen as a possible human carcinogen.

**NEUROTOXICITY:** Glyphosate: There was no evidence of nervous system toxicity, including delayed induced peripheral neuropathy in chickens (repeated oral dosing) or cholinesterase inhibition in rats (single oral dosing).

Oxyfluorfen: No data available.

**TERATOGENICITY:** Glyphosate: No evidence of teratogenic effects. Results of rat and rabbit teratology studies indicate that no birth defects were noted. This included dose levels of glyphosate that were

maternally toxic.

Oxyfluorfen (technical 70-75%): No evidence of teratogenic effects (birth defects). Not considered a teratogen in either rabbits or rats. Maternal toxicity associated with embryo-fetotoxicity and skeletal variations evident at 150 mg/kg/day dose levels in the rat study.

**REPRODUCTIVE TOXIN:** Glyphosate: No evidence of adverse reproductive effects. Glyphosate was fed continuously to rats at very high dose levels for 2 successive generations. Toxicity was reported in offspring from the high dose, a level which also produced adverse effects on the mothers. In a 3-generation study conducted at lower dose levels, no effects were seen on the ability of male or female rats to reproduce.

Oxyfluorfen (technical 70-75%): No evidence of adverse reproductive effects observed in a multigenerational rat feeding study (400 ppm highest dose).

**MUTAGENICITY:** Glyphosate: Glyphosate has not produced any genetic changes in various mutagenicity tests involving animals and animal or bacterial cells.

Oxyfluorfen (technical 70-75%): Oxyfluorfen was positive in the Ames and mouse lymphoma point mutation studies and negative in the in vitro rat hepatocyte unscheduled DNA synthesis and the in vivo rat cytogenetic assay and mouse bone marrow cell chromosome aberration assay.

## 12. ECOLOGICAL INFORMATION

**ENVIRONMENTAL DATA:** No data available.

**ECOTOXICOLOGICAL INFORMATION:** This material may be toxic to aquatic organisms and should be kept out of sewage and drainage systems and all bodies of water.

## 13. DISPOSAL CONSIDERATIONS

**FOR LARGE SPILLS:** Material collected that cannot be reprocessed should be disposed of in a landfill approved for pesticide disposal or in accordance with applicable Federal, State or local procedures.

**PRODUCT DISPOSAL:** The Solaris Group is committed to responsible environmental practices and recommends that all of the product be used up, carefully following all label directions and precautions.

If necessary to dispose of partially filled product container, then securely wrap it in several layers of newspaper and discard in trash.

**EMPTY CONTAINER:** Do not reuse container. Rinse thoroughly

before discarding in trash.

## 14. TRANSPORT INFORMATION

### DOT (DEPARTMENT OF TRANSPORTATION)

**PROPER SHIPPING NAME:** Not Regulated

**PRIMARY HAZARD CLASS/DIVISION:** None

**UN/NA NUMBER:** None

**PACKING GROUP:** No

**U.S. SURFACE FREIGHT CLASS:** Tree or weed killing compounds, NOI, Density of 20 lbs. or greater per cu. ft.

### AIR (ICAO/IATA)

**PROPER SHIPPING NAME:** Not Regulated

**SPECIAL SHIPPING NOTES:** The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

## 15. REGULATORY INFORMATION

### UNITED STATES

### SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

PRODUCT CLASSIFICATION UNDER SECTION 311 OF SARA					
ACUTE:	CHRONIC:	FIRE:	REACTIVITY:	PRESSURE	
YES	NO	YES	NO	GENERATING:	NO

**313 REPORTABLE INGREDIENTS:** Oxyfluorfen (42874-03-3).  
De Minimis Concentration for Section 313 of EPCRA is 1.0%.

### TSCA (TOXIC SUBSTANCE CONTROL ACT)

**TSCA REGULATORY:** All non FIFRA regulated components are on the US EPA's TSCA Inventory List.

## 16. OTHER INFORMATION

### HMIS CODES

**FIRE: 2 HEALTH: 1 REACTIVITY: 0 PROTECTION: -**

## **NFPA CODES**

**FIRE: 2 HEALTH: 1 REACTIVITY: 0 SPECIAL: -**

**APPROVAL DATE:** 12/06/1996

**REVISION SUMMARY** Revision #: 1

This MSDS replaces the September 11, 1995 MSDS. Any changes in information are as follows:

In Section 1

Date Prepared EPA Product Number

In Section 3

Sensitization (text) Chronic Effects (text) Potential Health Effects - Inhalation (text)

In Section 8

Engineering Controls (text) Eyes-Face Protection (text) Respiratory Protection (text)

In Section 11

Acute Eye (text) Dermal LD50 (text) Chronic (text) Carcinogenicity (text) Neurotoxicity (text) Oral LD50 (text) Inhalation LC50 (text) Teratology (text) Reproduction (text) Mutagenicity (text) Sensitization (text)

In Section 15

Fire

In Section 16

HMIS Flammability NFPA Flammability

**COMMENTS:** For additional information concerning this product, call the SOLARIS Groups Consumer Helpline at 800-225-2883.

**MANUFACTURER DISCLAIMER:** This Material Safety Data Sheet (MSDS) contains health, safety and environmental information for you and your employees. It does not replace the precautionary language, use directions, or the storage and health, safety and environmental information for you and your employees. It does not replace the precautionary language, use directions, or the storage and disposal information found on the product label. Information contained in this MSDS will help you to prepare for emergency response and to meet community right-to-know, emergency response and reporting requirements.

Use of this product is regulated by the U.S. Environmental Protection Agency (EPA) through the approved label copy. It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, Monsanto Company and The Solaris Group make no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determinations as to its suitability for their purposes prior to use. In no event will Monsanto Company or The Solaris Group be responsible for damages of any nature whatsoever resulting from the use of or reliance upon Information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.